[0043] At the outset, an example user interface is described. This example user interface may provide for centralized control of a vehicle. However, this example user interface may occlude important information, such as a map depicting a location of a vehicle and/or navigation information, during routine use of the user interface. As will be described, the unified user interface may improve upon this example user interface. It should be realized that the selection of controls or other information on the user interface may be through a touch interface or other well-known user interface mechanism.

[0044] Example User Interface

[0045] An example user interface for centralized control of a vehicle may be separated into a first portion and a second portion. The first portion, for example, may include a graphical depiction of the vehicle which the user interface may update in substantially real-time based on operation of the vehicle. For example, if the vehicle is braking, the graphical depiction may update to depict brake lights. As another example, if the vehicle has its front lights turned on, emergency flashers, and so on, then the graphical depiction may update accordingly. The second portion may include a graphical representation of a map. For example, the map may include an icon, such as an arrow, indicating a location of the vehicle on the map. In this example, as the vehicle is being driven the icon may be updated to reflect a substantially real-time position of the vehicle.

[0046] The first portion may therefore provide a succinct view of real-time conditions associated with operation of the vehicle. The user interface may, as an example, indicate lane markings in this first portion. Thus, a user may quickly view whether they are following the lane markings properly. Additionally, the vehicle may allow for autonomous operation. Thus, the user may view the first portion to ensure that the vehicle is properly recognizing lane markings when in an autonomous mode.

[0047] The second portion may be relied upon to present regional conditions associated with operating the vehicle. For example, the second portion may depict traffic conditions with respect to roads included in a map. In this example, the user may thus quickly ascertain whether a highway or freeway has any accidents, is traffic heavy, and so on. The second portion may additionally present navigation information. For example, a route to a particular ending location may be presented on the map along with an indication of a next turn to make. In this way, the user may quickly identify how to reach the ending location.

[0048] This example user interface may additionally include the display of a multitude of icons or other graphical indicia associated with disparate vehicle functionality which is controllable via the user interface. Example vehicle functionality may include air conditioning, music, monitoring energy usage of an electric vehicle, driving control, self-driving control, and so on. To adjust vehicle functionality, such as adjusting an air conditioning setting, a user may select an icon. As an example, the user interface may be presented via a touch-screen display. In this example, a user may touch a portion of the display depicting the icon. As another example, the user interface may be responsive to verbal commands. In this example, the user may provide a verbal command indicative of the type of vehicle functionality (e.g., 'set air conditioning').

[0049] Upon user-selection of an icon, a menu, or other user interface, associated with the type of vehicle functionality may be presented. Since the user interface is separated into two portions, the presented menu may be overlaid on top of at least one of the portions. For example, if a user selects an icon associated with music, the user interface may update to a music selection menu. It may be appreciated that the menu may occlude at least one of the two portions. As an example, the menu may be overlaid onto the map. Thus, at least a portion of the map may be occluded via this music menu. A user may be required to remove the menu to view an entirety of the map. For example, the user may swipe the menu in a downward motion.

[0050] Therefore, during routine operation of the example user interface, controlling vehicle functionality may cause information included in the first portion and/or the second portion to be masked. This may be disadvantageous during navigation of the vehicle. As an example, the second portion may indicate a route to be followed on a presented map. If the user prefers to select updated air conditioning settings, adjust music, view energy tracking information, and so on, at least a portion of the indicated route may become hidden.

[0051] Unified User Interface

[0052] As will be described, a system or processor rendering the unified user interface may combine an autonomous visualization (e.g., a graphical depiction of a vehicle) and map information. This combination may be referred to herein as a combined view and may be presented such that a user has a consistent view of, at least, the autonomous visualization and map information. The view may advantageously not be occluded by menus or user interfaces associated with types of vehicle functionality. As will be described, menus for vehicle functionality may optionally be dynamically presented separate from that of the combined autonomous visualization and map information.

[0053] Additionally, the system or processor may dynamically update the combined view according to upcoming driving events. For example, the system may adjust a zoom level associated with the combined view. In this example, the zoom level may be indicative of a render or virtual camera associated with the combined view. As an example, a higher zoom level may represent the render or virtual camera encompassing a greater area of map information. Thus, a size of the autonomous visualization may decrease accordingly.

[0054] Unified User Interface—Combined Autonomous Visualization and Map Information

[0055] In some embodiments, a system or processor may update the unified user interface according to current contextual information associated with operation of a vehicle. For example, if the vehicle is in park, the unified user interface may depict a large graphical depiction of the vehicle. Thus, the graphical depiction may substantially fill the unified user interface. This graphical depiction may include interactive options associated with control of the vehicle. For example, the vehicle may be an electric truck, and the options may include adjustment of suspension, opening/closing of a charging port, opening/closing of a tonneau cover, opening/closing of a tail gate, and so on. If the user selects adjustment of suspension, the unified user interface may update to reflect different suspension levels which may be selected.

[0056] This large graphical depiction of the vehicle described above may be included in a zoomed-in view of a map. For example, the unified user interface may optionally reflect environmental information proximate to the vehicle.